



# Production Readiness Review (PRR)

TO 119 - Transaction ID  
FSA Integration Partner  
April 9, 2003



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## ***Business Case - Transaction ID***

In order to support transactional assurance of transactions that flow between FMS and GAPS, FMS will incorporate a Transaction ID to link the original transactions from the feeder systems with acknowledgements by GAPS. This implementation allows Federal Student Aid (FSA) to improve its financial management internal controls by being able to effectively reconcile all FSA accounts to the Department of Education's General Ledger in a timely manner in order to receive a clean audit opinion.



## *Transaction ID*

### Overview:

- The Transaction ID functionality was designed to provide a means of uniquely identifying GAPS related transactions as they are processed through FMS.
- Transactions received from COD, DLO, DLC, RFMS, Campus Based and GAPS will have a Transaction ID when stored within FMS.
- The format for the Transaction ID is as follows: <Program ID><Date><Sequence #>
  - 2-digit Program ID
  - Date = YYYYMMDD
  - 8-digit Sequence Number

### Benefits:

The addition of a unique transaction identifier allows for:

- A mechanism to track transactions between the feeder systems, FMS, and GAPS.
- A decrease in delays in resolving transaction errors and reconciling items.
- The creation of reports to further aid in the reconciliation effort.



## ***Additional Elements***

### Custom Reports:

Two custom reports will be developed to simplify the reconciliation process between FMS and GAPS and incorporate the newly added Transaction ID and Transaction Code. One will be a reconciliation report for tracing GAPS related transactions that are processed in FMS. The second will show the accounting for a particular transaction based on Transaction ID.

### GAPS Common File Layout:

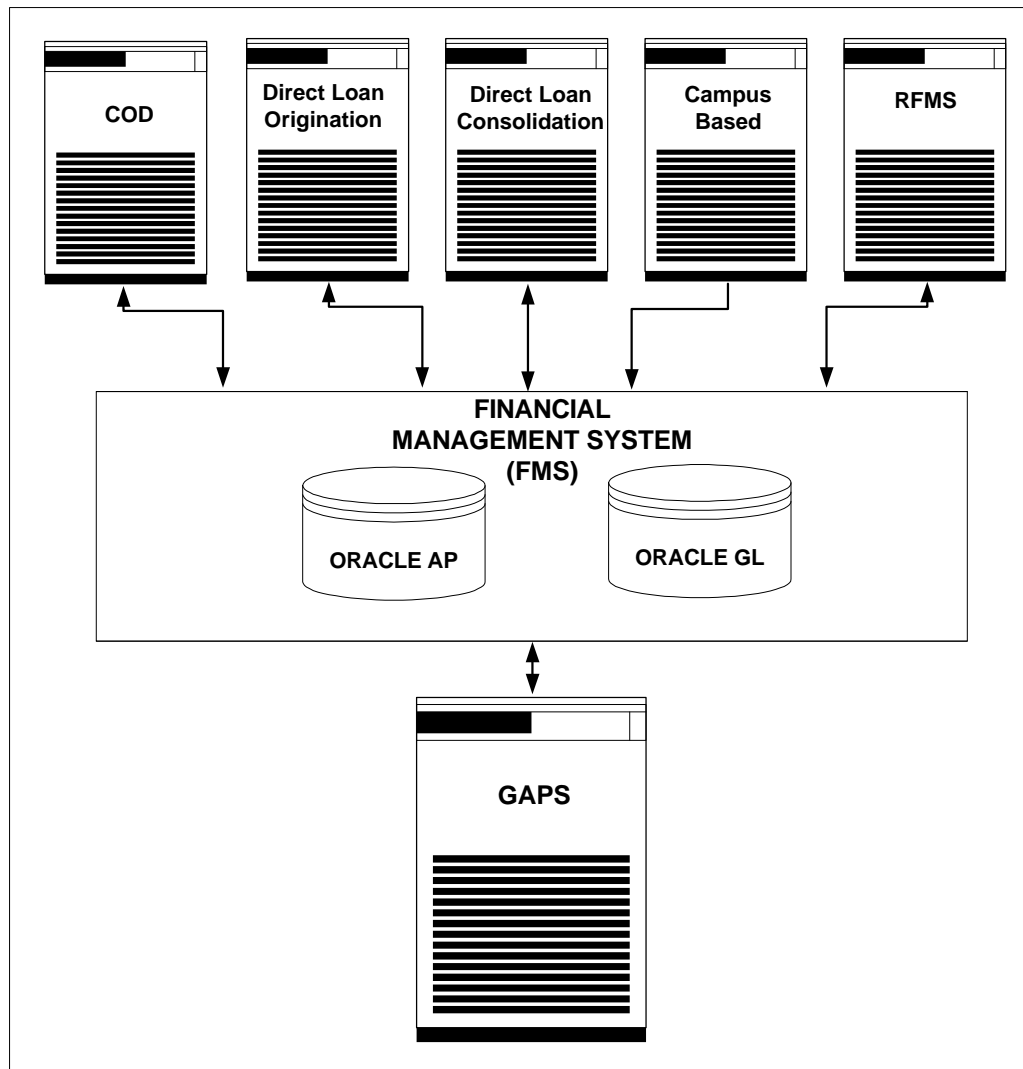
For further simplification, a Common File Layout will be used by GAPS to send transaction information back to FMS. This will streamline GAPS' delivery structure from 5 file formats to one.

### FMS Item Number:

The FMS Item Number will be added to each of the Journal Entry lines that are created in the FMS General Ledger. This will facilitate the reconciliation process and enhance FSA's financial reporting capability.



## Schematic of Current FMS Process for GAPS Related Transactions



- Transaction ID affects transactions sent to FMS from five feeder systems (COD, DLO, DLC, Campus Based, and RFMS).
- Each transaction will be sent to either the GL or AP within FMS.
- Transactions received by FMS from these feeders are processed and sent to GAPS.
- GAPS sends acknowledgements back to be processed in FMS GL.
- Finally, FMS will send the acknowledgements back to the designated feeder.



## ***COD Interface to FMS***

The COD to FMS Interface program was originally implemented as part of FMS Phase IV efforts. The program was designed to facilitate the FMS interaction with Common Origination and Disbursement (COD). This interface allows FMS to capture, control, and report on Direct Loan Origination and PELL related financial events that originate from COD.

### **Updates:**

- The COD to FMS interface program will be modified to allow COD to generate and send a Transaction ID to FMS.
- FMS will send notifications to COD when previously failed transactions have been corrected in FMS. For previously failed transactions that are corrected, a status code of 'C' will be passed from FMS to COD.
- Validation will occur to determine that a Transaction ID exists for all incoming transactions. If no Transaction ID is found, the transaction is sent back to COD with a status of 'F' - indicating a failed transaction.
- The interface program will be tuned to reduce processing time.



## ***Non-COD Feeder Interfaces (LO, LC, Campus Based, RFMS) to FMS***

Interfaces between FMS and four GAPS feeder systems allow FMS to capture and process transaction information through custom interface programs. The four feeder systems are Campus Based, Pell (RFMS), Direct Loan Origination (DLO), and Direct Loan Consolidation (DLC). The interfaces were designed and implemented as part of FMS Phase III efforts.

### **Updates:**

- Transactions sent by the Non-COD feeder interfaces will not have Transaction IDs. Each of these interfaces will be modified to add an FMS-generated Transaction ID when transactions are received by FMS. The ID will be stored within FMS and sent to GAPS.
- The 18-character Transaction ID will be stored in the GL and AP attribute field for each transaction from Campus Based, RFMS, Direct Loan Origination, and Direct Loan Consolidation.





## ***FMS Interface to GAPS***

The FMS to GAPS Interface program was originally implemented as part of FMS Phase III efforts. This interface was designed to facilitate FMS interaction with Grants and Administrative Payments System (GAPS). This allowed FMS to send files to GAPS containing accounting transactions related to Direct Loan Origination, Direct Loan Consolidation, Campus Based, and Pell programs.

### **Updates:**

- The updated GAPS Feeders to FMS interface programs and COD to FMS interface program will store the Transaction ID in FMS.
- Subsequently, the Transaction ID will be sent to GAPS along with the transactions through the FMS to GAPS Interface program.
- An OP transaction from COD will be split into a OB/PY pair within FMS. Both OB and PY transactions will share the same Transaction ID as the OP transaction. In order to send unique Transaction IDs to GAPS, FMS will change the Transaction ID sequence number to begin with '9' for the PY transaction.



## ***GAPS Interface to FMS***

The GAPS to FMS Interface program was originally implemented as part of FMS Phase III efforts. This interface was designed to facilitate FMS interaction with Grants and Administrative Payments System (GAPS). This allowed FMS to process five different files from GAPS containing accounting transactions related to Direct Loans, Campus Based, Pell, and LEAPP/SLEAPP.

### **Updates:**

- The GAPS to FMS interface will accept Transaction IDs for any transactions containing a Transaction ID.
- The interface will be modified to generate Transaction IDs for transactions that do not have Transaction IDs.
- FMS will accept DD transaction acknowledgements for PY transactions sent to GAPS.
- FMS will accept RE transactions instead of current CA transactions.
- GAPS will send one common file layout that includes all transactions.



## ***FMS Interface to COD***

The FMS to COD Interface program was originally implemented as part of the FMS Phase IV efforts. The program was designed to facilitate interaction from FMS to Common Origination and Disbursement (COD). This interface allows COD to receive Direct Loan Origination and PELL financial event information from FMS.

### **Updates:**

- Transaction acknowledgements sent to COD will contain the original Transaction ID that was sent by COD.
- For OB transaction acknowledgements from GAPS, FMS will send FL transaction acknowledgements to COD.
- For CC transaction acknowledgements from GAPS, FMS will send FL transaction acknowledgements to COD.
- FMS will send RF transaction acknowledgements to COD (for RF transactions originated by COD).
- FMS will send DD transaction acknowledgements to COD (for PY transactions originated by COD).



## *Summary of Approach*

**Planning:** This effort involved researching the current system and identifying ways in which to enhance the reconciliation process. During this stage, it was determined that the attachment of a unique transaction identifier would greatly aid in the tracking of transactions as they are processed through the system. It was also determined that the FMS item number should be placed on each Journal Entry line created within the General Ledger. Both of these implementations would be utilized to create two reconciliation reports. In coordination with GAPS, it was determined that one common file layout would be sent to FMS for all systems.

**Requirements and Design:** Requirements gathering involved working with FSA representatives to document the functionality required. This included the creation of a detailed requirements matrix and meeting memos to document all communication. These documents served as reference for the design effort and the creation of functional and technical design documents.

**Development:** During this stage, the development team leveraged specifications captured during the design stage to build the required Transaction ID functionality.

**Testing:** Unit, system, integration, and security testing were performed to ensure that the changes made provided the appropriate functionality as specified in the design stage.

**Implementation and Deployment:** This stage of work involves deploying the functionality and technology required to establish the Transaction ID components in manner consistent with the functional and technical requirements.



## *Project Timeline*

- |  |  |
|--|--|
| • Project Kickoff                          | October 7, 2002                          |
| • Requirements Gathering and Design Rel. 1 | October 7, 2002-<br>January 20, 2003     |
| • Requirements Gathering and Design Rel. 2 | January 6 -<br>February 28, 2003         |
| • Development and Unit Test Rel. 1         | November 26, 2002 -<br>February 28, 2003 |
| • Development and Unit Test Rel. 2         | February 19 - 28, 2003                   |
| • System Test                              | November 18, 2002 -<br>March 28, 2003    |
| • Integration Test (Non-COD)               | February 14 -<br>March 21, 2003          |
| • Integration Test (COD)                   | March 17 - April 11, 2003                |
| • Pre-PRR                                  | April 7, 2003                            |
| • PRR                                      | April 9, 2003                            |
| • Deployment                               | April 21, 2003                           |



## *Testing Summary*

**Unit Testing:** This phase of testing was conducted by the development team to ensure that the logic programmed met the functional requirements specified in the design documents and business requirements. This testing was completed in the development environment (PDEV) to test each individual piece of the solution. At the end of unit testing, the new components were migrated to the testing environment (INTCOM) for further testing

**System Testing:** This phase of testing was conducted by the testing team to ensure that the individual components function properly when integrated. Test scripts and data sets were developed and used to validate requirements. The testing was completed in a separate testing environment.

System testing included security testing for reports to determine that the reports will be only available for the appropriate responsibilities. The updates to the interfaces did not affect the security of the existing system. Therefore, no other security testing was conducted.

**Integration Testing:** A thorough end to end test of all updated components to ensure that the entire system functioned properly when integrated. Test scripts and data sets were developed and used to validate requirements. The testing effort was coordinated with COD, DLC, RFMS, and GAPS.

**Performance Testing:** Performance testing was not conducted during this release. The updates to the interfaces did not change the volume, the scheduling, the frequency, nor the complexity of the interface programs.



## *Testing Summary – System*

- During system testing - issues were logged and resolved prior to beginning integration testing
- Summary of Test Incidents logged during system testing:

	Status			
Test Phase	Open	Closed	Enhancement	Total
System	0	20	0	20

- Conclusion: Successfully completed system testing.

Closed: Error has been resolved and retested.

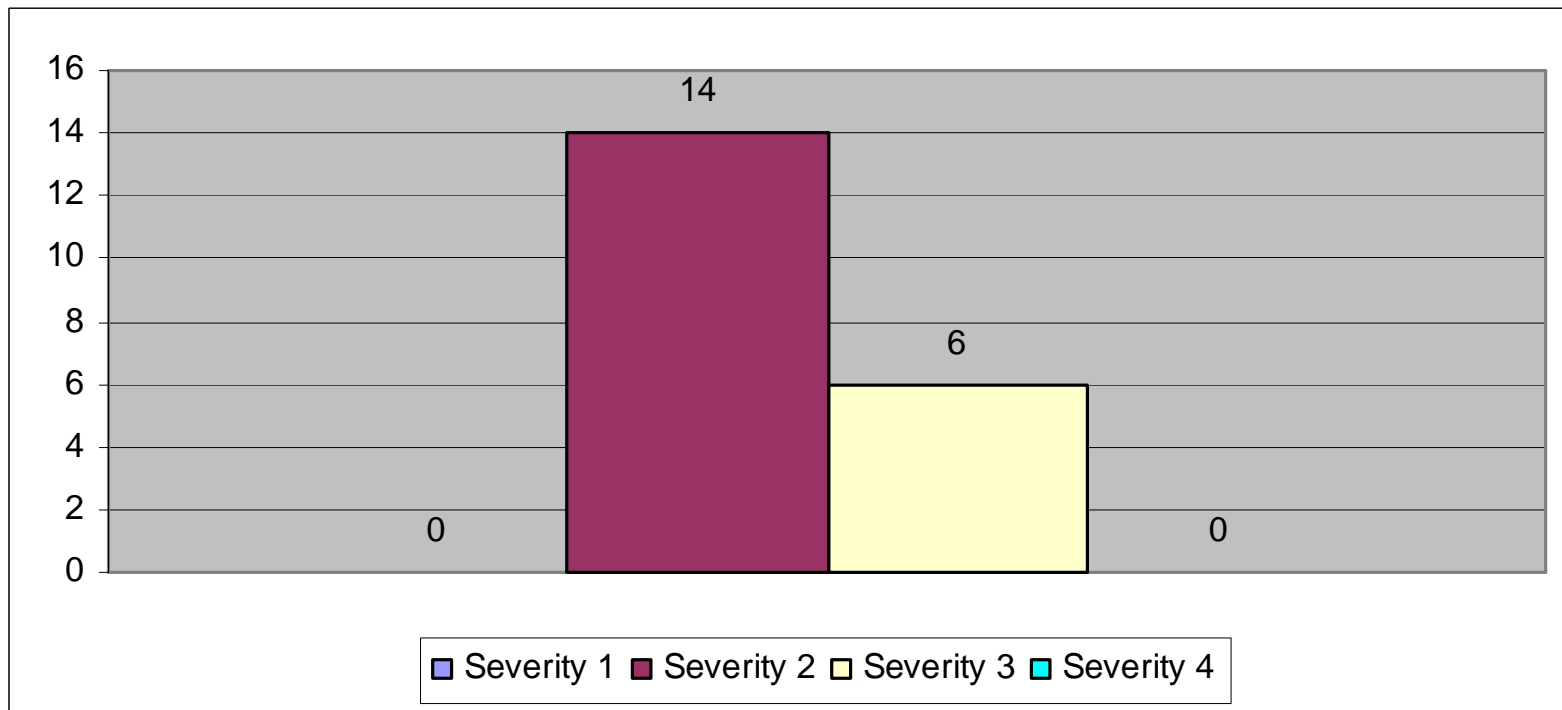
Open: Error has not been resolved.

Enhancement: Feature executes correctly, but minor cosmetic changes needed.



## Testing Summary – System (Continued)

### Transaction ID System Test Incidents by Severity



Severity 1: Major Problem. System doesn't respond or crashes.

Severity 2: Major feature halts. Incorrect results after execution.

Severity 3: Expectations of major feature not met. Workaround possible.

Severity 4: Feature executes correctly, but minor cosmetic changes needed.





## *Testing Summary - Integration*

- During integration testing - issues were logged and resolved as they arose.
- Summary of Test Incidents logged during integration testing:

	Status		
Test Phase	Open	Closed	Total
Integration	0	9	9

- Conclusion: Successfully completed integration testing.

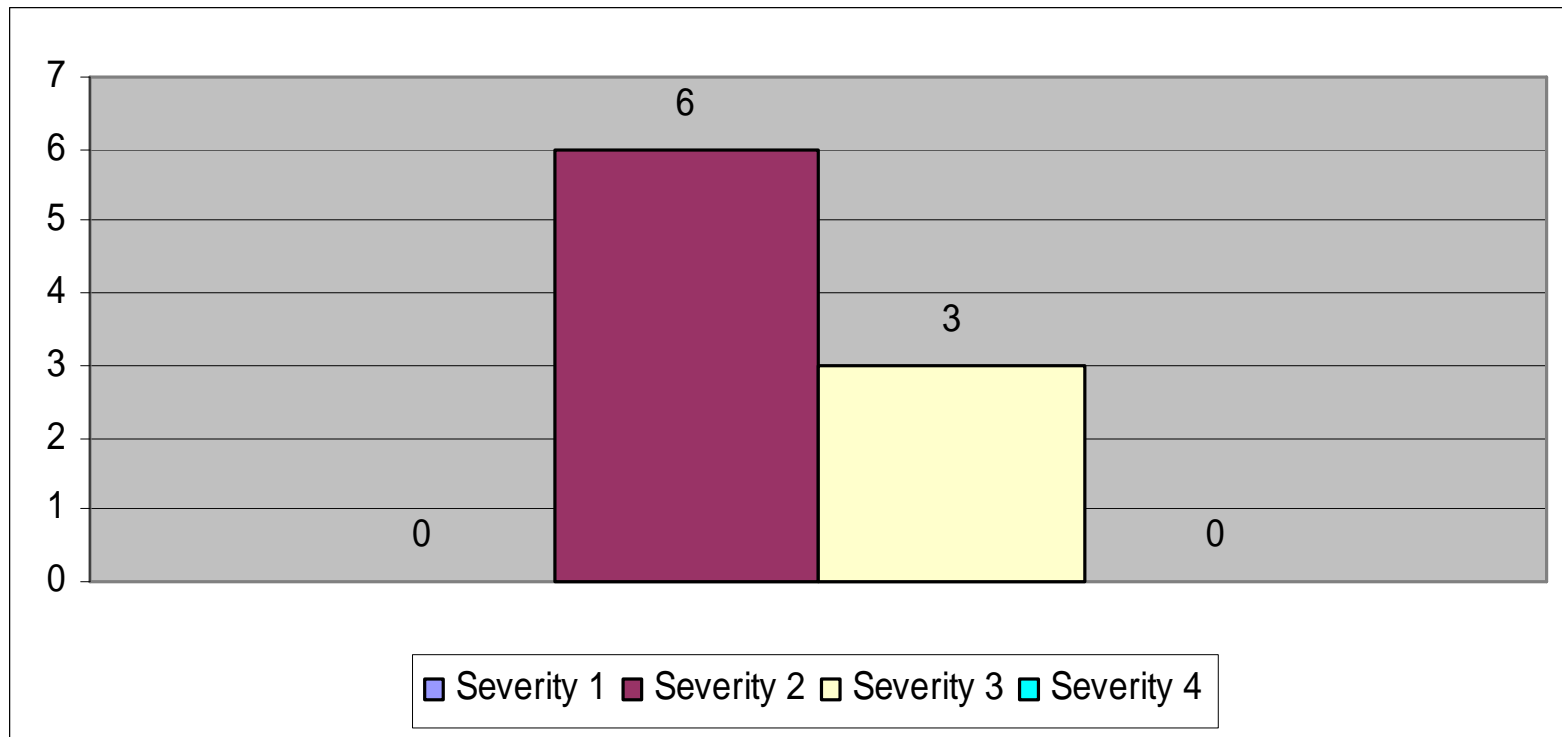
Open: Error has not been resolved.

Closed: Error has been resolved and retested.



## Testing Summary – Integration (Continued)

### Transaction ID Integration Test Incidents by Severity



Severity 1: Major Problem. System doesn't respond or crashes.

Severity 2: Major feature halts. Incorrect results after execution.

Severity 3: Expectations of major feature not met. Workaround possible.

Severity 4: Feature executes correctly, but minor cosmetic changes needed.



## ***Testing Summary – Incidents***

- Current Open System Test SIRs:

There are no open System Test incidents.

- Current Open Integration SIRs:

There are no open Integration Test incidents.

\* Details about Incidents that were recorded and resolved can be found in the system and integration test binders.



## ***Security Impact***

The interface program changes as part of TO 119 effort are enhancement changes to the existing interface programs. No changes were made to the existing FSA FMS security structure in terms of technical architecture. The additions made to the interfaces did not affect the security of the system.

Running the Reconciliation Reports will be limited to those given the designated responsibility. This was verified during the system test effort.



## *Quality Assurance / IV&V*

IV&V documentation and process reviews were performed by the external QA / IV&V team. The QA / IV&V team operates independently of the Integration Partner program and met regularly with the FMS TO 119 Testing team to:

- Perform reviews and traceability analysis of project documentation, application development, requirements, and test cases.
- Closely monitor processes, test progress and SIR closure.
- Provide list of PRR issues for Resolution.
- Perform PRR walkthrough and offer suggestions prior to Pre-PRR.



## ***Collaboration***

<b>Area</b>	<b>Responsible Party</b>
VDC	Mike Healy
Applications Maintenance	Shirley Pratt
Help Desk Readiness	Milton Thomas
FMS Operations	Milton Thomas
FSA CFO Accounting Division	Cynthia Heath



## *Implementation Considerations*

- The following implementation considerations have been identified:
  - The Payee Duns number is not included in the new common file layout sent from GAPS to FMS. LO states that the payee duns number is a required value for AD transactions and must be included in the file sent from FMS. LO has agreed to a temporary workaround until June, when the Payee Duns number is expected to be provided in the new common file layout. FMS will pass null values until June.
  - COD is scheduled to go live April 14<sup>th</sup> and FMS is scheduled for April 21<sup>st</sup>. Due to the gap in dates, COD will go live with their new code and the current FMS code. EAI will bridge the gap between COD code and FMS current code from April 14<sup>th</sup> to April 21<sup>st</sup>. FMS has arranged a minimal testing effort with COD to test this scenario on April 7<sup>th</sup> and 8<sup>th</sup>, utilizing EAI for code translation. Testing was completed successfully.